## REMARKS

The rejections and comments of the Examiner set forth in the Office Action dated October 4, 2002 have been carefully reviewed by the Applicants. Claims 1-20 and 22-28 are currently pending. Claims 1-20 and 22-28 have been canceled and replaced by new Claims 29-48.

Claims 1-4, 7-12, 14, 17-20, 23, 25-26 are rejected under 35 U.S.C 102(e) as being anticipated by Thei et al. (US 6,350,662 B1). In response, Claims 1-4, 7-12, 14, 17-20, 23, 25-26 have been canceled.

Claims 5, 15, and 27 are currently rejected under 35 U.S.C. 103(a) as being unpatentable over Thei et al. as applied to Claims 1-4, 7-12, 14, 17-20, 23, 25-26 above, and further in view of Wolf et al. In response, Claims 5, 15, and 27 have been canceled.

Claims 6, 13, 22, 24, and 28 are currently rejected under 35 U.S.C. 103(a) as being unpatentable over Thei et al. as applied to Claims 1-4, 7-12, 14, 17-20, 23, 25, and 26 above, and further in view of Ishikawa et al. In response, Claims 6, 13, 22, 24, and 28 have been canceled.

The Applicants submit that new Claims 29-48 are patentably distinct from Thei, and any combination of Thei, Wolf, and Ishikawa. Specifically, the process as claimed in Claim 29 includes the step of decreasing the temperature of the substrate from a

second temperature (at which liner oxide annealing is performed) to a third temperature, and filling the trench with a CVD oxide at the third temperature. This step not anticipated by Thei, and it is not taught or suggested by any combination of Thei, Wolf, and Ishikawa.

It is important to note that Thei at column 4, lines 21-25, teaches that the oxide fill is preferably performed by high density plasma (HDP) in a low pressure chemical vapor deposition (LPCVD) process. It is well known that HDP LPCVD equipment does not provide a heating element in the deposition reactor. The heat produced during HDP LPCVD is the result of the high density plasma, and substrate cooling is generally used to control the substrate temperature. It would be far from obvious, if at all practical, to use a high density plasma for annealing a substrate due to the amount of substrate damage from plasma bombardment that would occur over the time and temperature required for annealing of the liner oxide.

Thus, in the process of Thei, the substrate/liner oxide is annealed in one piece of equipment and then transferred to another piece of equipment for trench oxide fill. In practice, this would be done only after allowing the substrate to cool down to ambient temperature from the annealing temperature. This is in contrast to the temperature and time profile of new claims 29-48.

As shown in Figure 5 of the present application, and described at page 13, lines 19-20, in step 540, the substrate temperature is reduced from the anneal temperature of 1050 degrees to 800 degrees for further processing, e.g., the CVD deposition of the

silicon dioxide trench filler (page 12, lines 21-23). This sequence cannot be done in accordance with the process of Thei.

In summary, the Applicants submit that new Claims 29-48 in condition for allowance, and earnestly solicit such action from the Examiner.

Please charge any additional fees or apply any credits to our PTO deposit account number: 23-0085.

Respectfully submitted,

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Date: December 3, 2002

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